U.S. Department of Justice
Drug Enforcement Administration
Office of Forensic Sciences

The U.S. Attorney General has determined that the publication of this periodical is necessary in the transaction of the public business required by the Department of Justice. Information, instruction, and disclaimers are published in the January issues.

– JUNE 2012 –

SELECTED REFERENCES

[The Selected References section is a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. Abbreviated mailing address information duplicates that which is provided by the abstracting service. Patents and Proceedings are reported only by their *Chemical Abstracts* citation number. For full text copies of any of the articles listed, you may email the DEA Library at dea.library@usdoj.gov.]

1. Blachut D, Szawkalo J, Czarnocki Z. **Identification of common impurities present in the synthetic routes leading to 4-methylthioamphetamine (4-MTA). Part II: Reductive amination and nitropropene route.** Forensic Science International 2012;217(1-3):60-70. [Editor's Notes: Presents title study. Contact: Internal Security Agency, Forensic Laboratory, Warsaw 02-134, Poland.]
2. Casale JF, Hays PA. **The characterization of 4- and 5-iodo-2-aminoindan.** Microgram Journal 2012;9(1):18-26. [Editor's Notes: Presents title study. Contact: Drug Enforcement Administration, Special Testing and Research Laboratory, Dulles, VA 20166-9509, USA.]

3. Casale JF, Hays PA. **The characterization of α-pyrrolidinopentiophenone.** Microgram Journal 2012;9(1):33-38. [Editor's Notes: Presents title study. Contact: Drug Enforcement Administration, Special Testing and Research Laboratory, Dulles, VA 20166-9509, USA.]

4. Davis S, Rands-Trevor K, Boyd S, Edirisinghe M. **The characterisation of two halogenated cathinone analogues: 3,5-Difluoromethcathinone and 3,5-dichloromethcathinone.** Forensic Science International 2012;217(1-3):139-145. [Editor's Notes: Presents title study. Contact: Queensland Health Forensic and Scientific Services (QHFSS), Brisbane, Australia.]

5. Hays PA, Casale JF, Berrier AL. **The characterization of 2-(3-methoxyphenyl)-2-(ethylamino)cyclohexanone (methoxetamine).** Microgram Journal 2012;9(1):3-17. [Editor's Notes: Presents title study. Contact: Drug Enforcement Administration, Special Testing and Research Laboratory, Dulles, VA 20166-9509, USA.]

6. Lurie IS, Berrier AL, Casale JF, Iio R, Bozenko JS. **Profiling of illicit fentanyl using UHPLC-MS/MS.** Forensic Science International 2012;220(1-3):191-196. [Editor's Notes: A profiling method for fentanyl in seized drugs using UHPLC-MS/MS is presented. Target analysis was performed for 40 fentanyl processing impurities, several of which are markers for a specific synthetic route (Siegfried or Janssen). This technology is also applicable to the analysis of exhibits containing trace levels of fentanyl in the presence of significantly excess amounts of heroin and/or adulterants. Contact: Drug Enforcement Administration, Special Testing and Research Laboratory, Dulles, VA 20166-9509, USA.]

7. Musah RA, Domin MA, Walling MA, Shepard JRE. **Rapid identification of synthetic cannabinoids in herbal samples via direct analysis in real time mass spectrometry.** Rapid Communications in Mass Spectrometry 2012;26(9):1109-1114. [Editor's Notes: Presents title study. Contact: Department of Chemistry, University at Albany, State University of New York (SUNY), 1400 Washington Ave., Albany, NY 12222, USA.]

8. Toole KE, Fu S, Shimmon RG, Kraymen N. **Color tests for the preliminary identification of methcathinone and analogues of methcathinone.** Microgram Journal 2012;9(1):27-32. [Editor's Notes: Presents title study. Contact: Australian Nuclear Science and Technology Organisation, Locked Bag b2001, Kirrawee DC NSW 2232, Australia.]

9. Trofin IG, Vlad CC, Noja VV, Dabija G. **Identification and characterization of special types of herbal cannabis.** Scientific Bulletin - University "Politehnica" of Bucharest, Series B: Chemistry and Materials Science 2012;74(1):119-130. [Editor's Notes: Presents title study. Contact: General Inspectorate of Romanian Police, Central Laboratory for Drug Analysis and Profiling, Bucharest, Romania.]

10. Westphal F, Junge T, Girreser U, Greibl W, Doering C. **Mass, NMR and IR spectroscopic characterization of pentedrone and pentylone and identification of their isocathinone by-products.** Forensic Science International 2012;217(1-3):157-167. [Editor's Notes: Presents title study. Contact: Section Narcotics/Toxicology, State Bureau of Criminal Investigation Schleswig-Holstein, Kiel 24116, Germany.]

Additional References of Possible Interest:

1. Chittrakarn S, Penjamras P, Keawpradub N. **Quantitative analysis of mitragynine, codeine, caffeine, chlorpheniramine and phenylephrine in a kratom (Mitragyna Speciosa Korth.) cocktail using high-performance liquid chromatography.** Forensic Science International 2012;217(1-3):81-86. [Editor's Notes: Presents title study. Contact: Department of Pharmacology, Faculty of Science, Prince of Songkla University, Songkhla 90112, Thailand.]

2. Gambaro V, Arnoldi S, Colombo ML, Dell'Acqua L, Guerrini K, Roda G. **Determination of the active principles of Catha Edulis: Quali-quantitative analysis of cathinone, cathine, and phenylpropanolamine.** Forensic Science International 2012;217(1-3):87-92. [Editor's Notes: Presents title study. Contact: Dipartimento di Scienze Farmaceutiche "Pietro Pratesi" Universita di Milano, Milan 20133, Italy.]

3. Little JL, Williams AJ, Pshenichnov A, Tkachenko V. **Identification of "known unknowns" utilizing accurate mass data and ChemSpider.** Journal of the American Society for Mass Spectrometry 2012;23(1):179-185. [Editor's Notes: In many cases, an unknown to an investigator is actually known in the chemical literature, a reference database, or an internet resource. We refer to these types of compounds as "known unknowns." ChemSpider is a very valuable internet database of known compounds that can be used in the identification of these types of compounds. The database contains over 26 million entries from hundreds of data sources and is provided as a free resource to the community. Accurate mass mass spectrometry data is used to query the database by either elemental composition or a monoisotopic mass. Searching by elemental composition is the preferred approach. However, it is often difficult to determine a unique elemental composition for compounds with molecular weights greater than 600 Da. In these cases, searching by the monoisotopic mass is advantageous. In either case, the search results are refined by sorting the number of references associated with each compound in descending order. This raises the most useful candidates to the top of the list for further evaluation. These approaches were shown to be successful in identifying "known unknowns" noted in our laboratory. Contact: Eastman Chemical Company, Kingsport, TN 37662, USA.]

4. Meyer MR, Vollmar C, Schwaninger AE, Wolf E, Maurer HH. **New cathinone-derived designer drugs 3-bromomethcathinone and 3-fluoromethcathinone: Studies on their metabolism in rat urine and human liver microsomes using GC-MS and LC-high-resolution MS and their detectability in urine.** Journal of Mass Spectrometry 2012;47(2):253-262. [Editor's Notes: Presents title study. Contact: Department of Experimental and Clinical Toxicology, Institute of Experimental and Clinical Pharmacology and Toxicology, Saarland University, Homburg (Saar), Germany.]

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THE DEA STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The schedule for the DEA State and Local Forensic Chemists Seminar is as follows:

November 5 - 9, 2012
March 11 - 15, 2013
June 10 - 14, 2013
September 16 - 20, 2013
November 4 - 8, 2013

The school is open only to forensic chemists working for law enforcement agencies. It is intended for chemists who have completed their agency's internal training program and have also been working on the bench for at least one year. There is no tuition charge. The course is held at the Hyatt Place Dulles North Hotel in Sterling, Virginia (near the Washington/Dulles International Airport). A copy of the application form is reproduced on the last page of this issue of *Microgram Bulletin*. Completed applications should be mailed to the Special Testing and Research Laboratory at 22624 Dulles Summit Court, Dulles, VA 20166. For additional information, email DEA-Forensic.Chemist.Seminar@usdoj.gov.

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SCIENTIFIC MEETINGS

Title: The 41st Annual MAFS Meeting
Sponsoring Organization: Midwestern Association of Forensic Scientists
Inclusive Dates: September 24 - 28, 2012
Location: Hilton Milwaukee City Center (Milwaukee, WI)
Contact Information: See website
Website: www.mafs.net

Title: Southern Association of Forensic Scientists 2012 Annual Meeting
Sponsoring Organization: Southern Association of Forensic Scientists
Inclusive Dates: September 30 - October 4, 2012
Location: Hilton Pensacola Beach Gulf Front (Pensacola Beach, FL)
Contact Information: See website
Website: www.southernforensic.org

DEA State and Local Forensic Chemist Seminar Application

Name: (PRINT NAME EXACTLY AS IT IS TO APPEAR ON CERTIFICATE)	Title:

Employer:

Your Office Mailing Address (include city, state, and zipcode):	Length of Service:

Business Telephone: ( ) -	Business Fax: ( ) -	Date of Application:

Email Address:

Education

College or University	Degree	Major

Please Check Which Techniques or Equipment Are Used in Your Laboratory

	Color Tests		UV
	Column Chromatography		IR
	Microcrystal Tests		CE
	Thin Layer Chromatography		GC/MS
	GC		Other (please specify)
	HPLC		Other (please specify)

Indicate Analytical Problem(s) Nominee Would Like to Have Covered:

Choice of Seminar Dates:
1st Choice: 2nd Choice:

Laboratory Chief/Director:

Printed Name:_____ Signature: _____

Title: _____ Date: _____

Phone: _____